# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/733,629 | 12/08/2000 | David A. Brown | 2037.2014-000 | 2407 |

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| 21005 | 7590 | 11/01/2006 | |

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| EXAMINER |
|---|
| HOM, SHICK C |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2616 | |

DATE MAILED: 11/01/2006


Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/733,629 | BROWN, DAVID A. |
| | Examiner | Art Unit | |
| | Shick C. Hom | 2616 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on _14 August 2006_.

2a) ☒ This action is **FINAL**.          2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) _1-17_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-17_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1.    Applicant's arguments filed 8/14/06 have been fully considered but they are not persuasive.

In page 7 of the remarks, applicant argued that Tzeng does not teach of suggest "storing a second set of routes stored in nodes of a second subtree, the second subtree being accessed through a second pointer to a second subtree root node, while access is provided to the first set of routes stored in the first subtree by the first pointer" is not persuasive because Tzeng in col. 2 lines 18-45 recite the first K bits of the address being treated as an index to the RAM; while the $K+1^{th}$ bit of the address is used to access either the left and right child of the root node, which corresponds to the first subtree and second subtree, respectively, and col. 2 lines 5-17 which recite use of content addressable memory whereby all entries are accessed in parallel and col. 3 lines 18-49 which recite accessing or searching, including insertion and deletion of routes starts at the median length, i.e. the first and second subtree clearly reads on access to the second subtree root node, while access is provided to the first set of routes stored in the first subtree by the first pointer as claimed.

## Claim Rejections - 35 USC § 102

2.    The following is a quotation of the appropriate paragraphs

of 35 U.S.C. 102 that form the basis for the rejections under

this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published
> under section 122(b), by another filed in the United States before the
> invention by the applicant for patent or (2) a patent granted on an
> application for patent by another filed in the United States before the
> invention by the applicant for patent, except that an international
> application filed under the treaty defined in section 351(a) shall have the
> effects for purposes of this subsection of an application filed in the
> United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English
> language.

3.    Claims 1, 3-5, 7-9, and 11-17 are rejected under 35

U.S.C. 102(e) as being anticipated by Tzeng (6,067,574).


Regarding claims 1, 5, 9, 13:

Tzeng discloses a method for updating a lookup table

comprising the steps of: providing access to a first set of

routes stored in nodes of a first subtree, the first subtree

being accessed through a first pointer to a first subtree root

node; storing a second set of routes stored in nodes of a second

subtree, the second subtree being accessed through a second

pointer to a second subtree root node, while access is provided

to the first set of routes stored in the first subtree by the

first by the first pointer; and switching access to the second

set of routes stored in the second subtree by replacing the

first pointer to the first subtree root node with the

second pointer to the second subtree root node (see col. 2 lines

18-45, col. 2 line 64 to col. 3 line 17, and col. 3 line 63 to

col. 4 line 23 which recite the IP routing lookup table having

pointer to the root node of a tree, insertion and deletion of

entries in the lookup table, and whereby the subtree begins at

the root node of the tree, respectively; col. 4 line 56 to col.

5 line 12 and col. 5 lines 55-63 which recite a tree can be

partitioned into multiple small trees and each node of the tree

or subtree having pointer to its descendents clearly reads on

routes being stored in nodes of a subtree).

Regarding claims 3-4, 7-8, 11-12:

Tzeng discloses wherein the number of routes in the first

set of routes is less than or greater than the number of routes

in the second set of routes (see Fig. 3 where the number of

routes from node B is greater than the number of routes from

node C).

Regarding claims 14-17:

Tzeng discloses wherein the first set of routes and the

second set of routes include a longest prefix route for the

destination address; wherein the destination address includes an

IP Protocol address; wherein the second set of routes includes

another route corresponding to the longest prefix route for

another destination address; wherein the first set of routes and

the second set of routes are associated with nodes at the bottom

level of a subtree (see the abstract and col. 3 line 53 to col.

4 line 23 which recite the use of the destination address

includes searching for the prefix having the longest match when

compared to the destination address; and col. 1 lines 8-10 which

recite the stored IP routing information).


### Claim Rejections - 35 USC § 103

1.    The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the
> art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

2.    Claim 2, 6, and 10 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Tzeng (6,067,574) in view of Nakatsu et

al. (5,787,151).


For claims 2, 6, and 10, Tzeng discloses the method and

apparatus described in paragraph 3 of this office action. Tzeng

discloses all the subject matter of the claimed invention with the exception of the step and means of deallocating the memory used by the first set of routes after switching access.

Nakatsu et al. from the same or similar fields of endeavor teach that it is known to provide the step and means of deallocating the memory used by the first set of routes after switching access (see col. 12 lines 13-29 which recite upon call termination, the manager deallocating the memory buffers to be available for use by other call flows). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide the step and means of deallocating the memory used by the first set of routes after switching access as taught by Nakatsu et al. in the method and apparatus of Tzeng. The step and means of deallocating the memory used by the first set of routes after switching access can be implemented by connecting the memory manager of Nakatsu et al. to the memory of Tzeng. The motivation for using the memory manager as taught by Nakatsu et al. in the method and apparatus of Tzeng being that it provides more efficiency for the system since the system can function using less memory by deallocating the memory no longer needed.

*Conclusion*

4.    **THIS ACTION IS MADE FINAL.**  Applicant is reminded of the

extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action

is set to expire THREE MONTHS from the mailing date of this

action.  In the event a first reply is filed within TWO MONTHS

of the mailing date of this final action and the advisory action

is not mailed until after the end of the THREE-MONTH shortened

statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated

from the mailing date of the advisory action.  In no event,

however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.


5.    Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Shick C.

Hom whose telephone number is 571-272-3173.  The examiner can

normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Seema Rao can be

reached on 571-272-3174.  The fax phone number for the

organization where this application or proceeding is assigned is

571-273-8300.

Information regarding the status of an application may be

obtained from the Patent Application Information Retrieval

(PAIR) system.  Status information for published applications

may be obtained from either Private PAIR or Public PAIR.  Status

information for unpublished applications is available through

Private PAIR only.  For more information about the PAIR system,

see http://pair-direct.uspto.gov. Should you have questions on

access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or

access to the automated information system, call 800-786-9199

(IN USA OR CANADA) or 571-272-1000.


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